

WE CLAIM:

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1 1. A hand-held display system for playing video games, comprising:
2 a housing grippable by a user's hands;
3 a liquid crystal display viewable by the user gripping the housing;
4 input devices operable by the user when the user grips the housing;
5 a connector for, in use, operatively connecting to portable storage media storing video
6 game programs for the video games;
7 first processing circuitry for processing video game programs having a first program
8 specification; and
9 second processing circuitry for processing video game programs having a second program
10 specification.

1 2. The hand-held display system according to claim 1, wherein the first program
2 specification is an 8-bit specification and the second program specification is a 32-bit specification.

1 3. The hand-held display system according to claim 1, wherein the input devices
2 comprise one or more first input devices arranged on one side of the liquid crystal display and one
3 or more second input devices arranged on the other side of the liquid crystal display, the first input
4 devices accessible using a thumb of one hand and the second input devices accessible using a
5 thumb of the other hand.

1 4. The hand-held display system according to claim 3, wherein the input devices
2 further comprise shoulder buttons at the upper corners of the housing, the should buttons
3 accessible using the index fingers of the user's hands.

1 5. The hand-held display system according to claim 1, wherein the memory space of a
2 portable memory medium storing a video game program in accordance with the second program
3 specification is mapped to two or more memory spaces of the second processing circuitry each
4 having different access speeds.

1 6. The hand-held display system according to claim 5, further comprising:
2 a register for setting individual access speeds for each of the memory spaces of the
3 processing circuitry to which the memory space of the computer-readable medium is mapped.

1 7. The hand-held display system according to claim 6, wherein the register sets an
2 access speed in which a first access has 3 wait cycles and a second access has 1 wait cycle.

1 8. The hand-held display system according to claim 1, wherein the video game
2 program is stored in a ROM portion of the portable memory medium.

1 9. The hand-held display system according to claim 1, wherein the portable memory
2 medium is accessible both randomly and sequentially.

1 10. The hand-held display system according to claim 9, further comprising:
2 an address counter responsive to a memory read signal for counting up memory addresses
3 to sequentially access the computer-readable medium.

1 11. The hand-held display system according to claim 1, wherein the second processing
2 circuitry renders objects on one or more background screens on the liquid crystal display screen,
3 wherein the background screen is selectively rendered in one of a character format and a
4 bit-map format.

1 12. The hand-held display system according to claim 11, wherein the components of
2 the background screen are characters of 8 x 8 dots in the character format.

1 13. The hand-held display system according to claim 11, wherein each of the one or
2 more background screens has an associated display priority relative to the other background
3 screens.

1 14. The hand-held display system according to claim 11, wherein the objects are
2 rendered in the character format.

1 15. The hand-held display system according to claim 11, wherein each of the objects
2 has an associated display priority relative to the other objects.

1 16. The hand-held display system according to claim 1, wherein the first processing
2 circuitry comprises an n -bit bus controller and the second processing circuitry comprises a
3 multiplex bus controller and an n -bit bus controller.

1 17. The hand-held display system according to claim 16, wherein the n -bit bus
2 controller of the first processing circuitry comprises an 8-bit bus controller for accessing portable
3 memory media storing video game programs having the first program specification, the multiplex
4 bus controller of the second processing circuitry accesses first portions of portable memory media
5 storing video game programs having the second program specification, and the n -bit bus controller
6 of the second processing circuitry comprises an 8-bit bus controller for accessing second portions
7 of portable memory media storing video game programs having the second program specification.

1 18. A hand-held display system for playing video games, comprising:
2 a housing grippable by a user's hands;
3 a liquid crystal display viewable by the user gripping the housing;
4 input devices operable by the user when the user grips the housing;
5 a connector for, in use, operatively connecting to portable storage media storing video
6 game programs for the video games; and
7 processing circuitry for processing video game programs, and
8 wherein the liquid crystal display has first and second display formats for displaying images
9 generated by the processing circuitry.

1 19. The hand-held display system according to claim 18, wherein the first display
2 format is a wide-screen display format and the second display format is a non-widescreen display
3 format.

1 20. The hand-held display system according to claim 18, wherein the input devices are
2 operable to selectively switch between the first and second display formats.

1 21. A hand-held display system for playing a video game, comprising:
2 a housing grippable by a user's hands;
3 a liquid crystal display viewable by the user gripping the housing;
4 input devices operable by the user when the user grips the housing;
5 a connector for, in use, operatively connecting to a computer-readable medium having
6 stored thereon a video game program for the video game;
7 a first boot ROM storing code that is executed if the computer-readable medium is
8 determined to store a video game program of a first specification; and
9 a second boot ROM storing code that is executed if the computer-readable medium is
10 determined to store a video game program of a second specification.

1 22. The hand-held display system according to claim 21, wherein the first specification
2 is an 8-bit specification and the second specification is a 32-bit specification.

1 23. The hand-held display system according to claim 21, wherein the input devices
2 comprise one or more first input devices arranged on one side of the liquid crystal display and one
3 or more second input devices arranged on the other side of the liquid crystal display, the first input
4 devices accessible using a thumb of one hand and the second input devices accessible using a
5 thumb of the other hand.

1 24. The hand-held display system according to claim 23, wherein the input devices
2 further comprise shoulder buttons at the upper corners of the housing, the should buttons
3 accessible using the index fingers of the user's hands.

1 25. The hand-held display system according to claim 21, further comprising:
2 a first processing circuit for processing a video game program of the first specification; and
3 a second processing circuit for processing a video game program of the second
4 specification.

1 26. A hand-held display system for playing a video game, comprising:
2 a housing grippable by a user's hands;
3 a liquid crystal display viewable by the user gripping the housing;
4 input devices operable by the user when the user grips the housing;
5 a connector for, in use, operatively connecting to a computer-readable medium having
6 stored thereon a video game program for the video game;
7 processing circuitry for processing the video game program,
8 wherein the memory space of the computer-readable medium is mapped to two or more
9 memory spaces of the processing circuitry each having a different access speeds.

1 27. The hand-held display system according to claim 26, further comprising:
2 a register for setting individual access speeds for each of the memory spaces of the
3 processing circuitry to which the memory space of the computer-readable medium is mapped.

1 28. The hand-held display system according to claim 27, wherein the register sets an
2 access speed in which a first access has 3 wait cycles and a second access has 1 wait cycle.

1 29. The hand-held display system according to claim 26, wherein the video program is
2 stored in a ROM portion of the computer-readable medium.

1 30. The hand-held display system according to claim 26, wherein the computer-
2 readable medium is accessible both randomly and sequentially.

1 31. The hand-held display system according to claim 30, further comprising:
2 an address counter responsive to a memory read signal for counting up memory addresses
3 to sequentially access the computer-readable medium.

32. A hand-held display system for playing a video game, comprising:
a housing grippable by a user's hands;
a liquid crystal display viewable by the user gripping the housing;
input devices operable by the user when the user grips the housing;
a connector for, in use, operatively connecting to a computer-readable medium having
stored thereon a video game program for the video game;
processing circuitry for processing the video game program to render objects on one or
more background screens on the liquid crystal display screen,
wherein the background screen is selectively rendered in one of a character format and a
bit-map format.

33. The hand-held display system according to claim 32, wherein the components of
the background screen are characters of 8 x 8 dots in the character format.

34. The hand-held display system according to claim 32, wherein each of the one or
more background screens has an associated display priority relative to the other background
screens.

35. The hand-held display system according to claim 32, wherein the objects are
rendered in the character format.

1 36. A cable for connecting a master hand-held display systems with a slave hand-held
2 display system, each of the master and slave hand-held display systems adapted for playing a video
3 game and comprising a housing grippable by a user's hands, a liquid crystal display viewable by the
4 user gripping the housing, input devices operable by the user when the user grips the housing, a
5 connector for, in use, operatively connecting to a computer-readable medium having stored
6 thereon a video game program for the video game, processing circuitry for processing the video
7 game program, and an interface for, in use, connecting to the cable, the cable comprising:

8 a first connector for connecting to the interface of the master hand-held display system;

9 a second connector for connecting to the interface of the slave hand-held display system;

10 and

11 a third connector for connecting to a connector of another cable,

12 wherein each of the master and slave hand-held display systems further comprise
13 communication circuitry for communicating data therebetween and between any additional slave
14 hand-held display systems connected to the third connector of the cable.

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